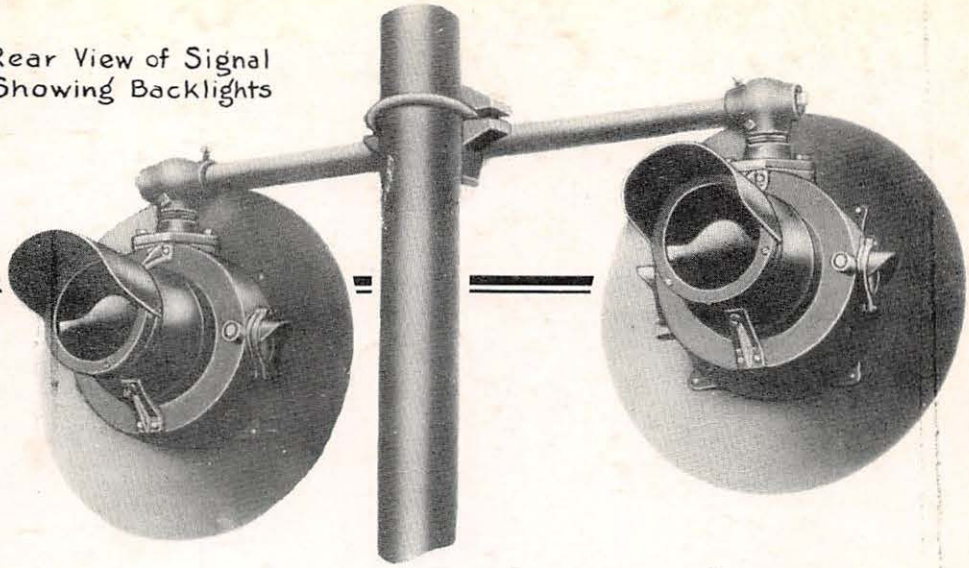
Rear View of Signal
Showing Backlights



Style "HC-8"
Flashing Light Signal

U.D.
No. 181

Union Switch & Signal Co.

Swissvale, Pa.

Rotoprinted IN U.S.A.

Union Switch & Signal Co.

SWISSVALE, PA.

Subject Style "HC-8" Flashing Light Signal

Union Development

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5.6 Sheets

The Union Style "HC-5" Flashing Light Unit described in our Bulletin #125 has fulfilled the requirements of a "one direction" Highway Crossing Light Unit. With increased application new requirements have arisen to necessitate the development

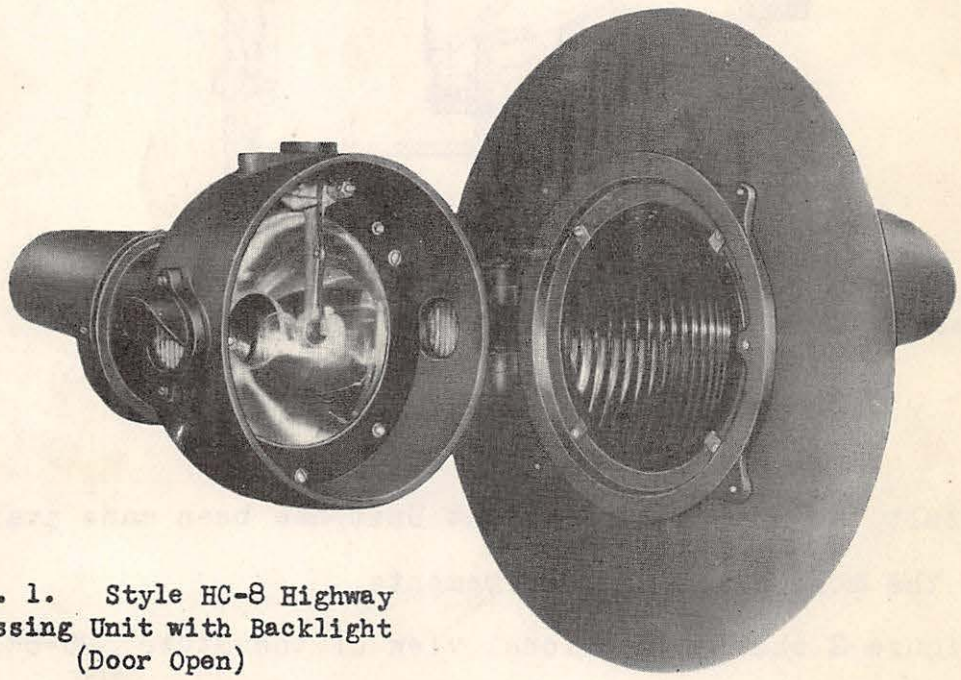

Fig. 1. Style HC-8 Highway Crossing Unit with Backlight (Door Open)

of associated equipment such as described in U.D. 171. One particular requirement, the demand for backlights on flashing light signal units, received an answer in the Style "HC-7" Light Unit. While this signal proved satisfactory in most installations, it did not possess sufficient backlight spread for the extreme cases,

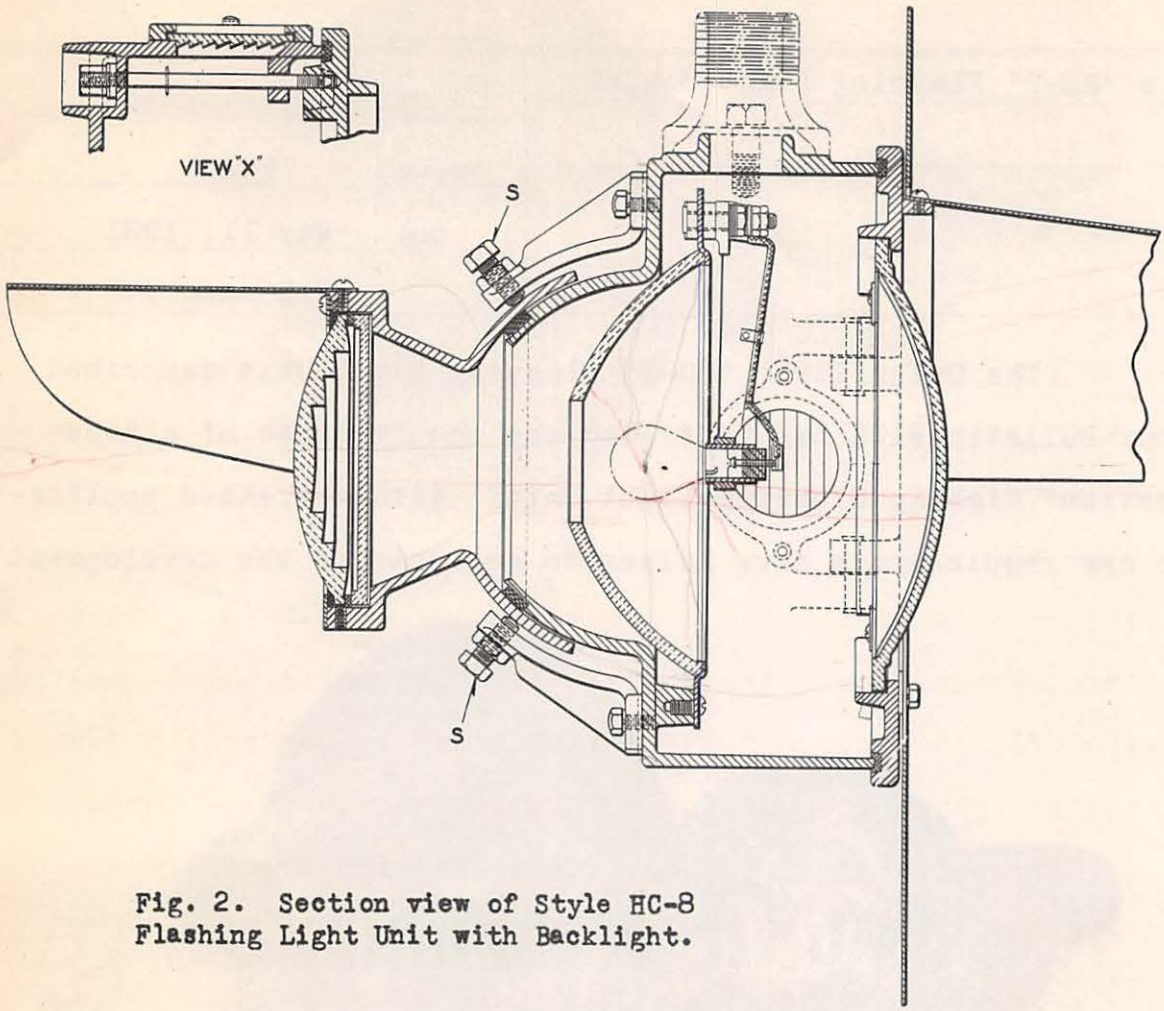

Fig. 2. Section view of Style HC-8 Flashing Light Unit with Backlight.

and as a result the Style "HC-8" Light Unit has been made available to apply to the more exacting requirements.

Figure 2 shows a sectional view of the Style "HC-8" Light Unit, from which it will be noted that radial adjustment is secured by means of concentric engagement between the spherical socket seat on the back of the main casting, and the socket face of the backlight casting. This joint is made dust proof and weathertight since the bearing is against a graphite coated felt gasket. The adjustment of the backlight is accomplished by loosening adjustment screws "S", and tightening them after the proper alignment

of the backlight has been secured.

With this adjustment the backlight can be aligned at any angle up to 15° above or below, and 20° to either side of the axial center line of the main light unit. In addition a deflecting prism is mounted behind the backlight lens, which spreads the beam 30° to one side. This spread can be obtained either to the right or left as desired, by turning the backlight casting in which the lens and deflecting prism are mounted. Arrangements have been made for mounting the hood in either of two positions, therefore when the backlight casting is revolved 180° the hood can be removed and replaced on the opposite side of the casting. With this design the backlight has an actual horizontal beam spread of 30° which is effective within the limits of 50° either side of the center line of the main light beam.

Figs. 3 and 4 show the adjustment and spread of the backlight for typical two and four track crossings with 30 ft. roadways. Similar sketches for various widths of roadways and numbers of tracks will show the adaptability of the "HC-8" backlight for special cases.

In this design of signal, under all conditions of adjustment of the backlight, the center of the lamp filament is located at the focal point of both the backlight lens and the parabolic reflector used to project the main beam through the front lens. A hole in the parabolic reflector, shown in Fig. 1, permits the full radial rotation of the backlight unit without affecting the full coverage of the 5 3/8" back lens.

This signal is provided with sidelights the same as the

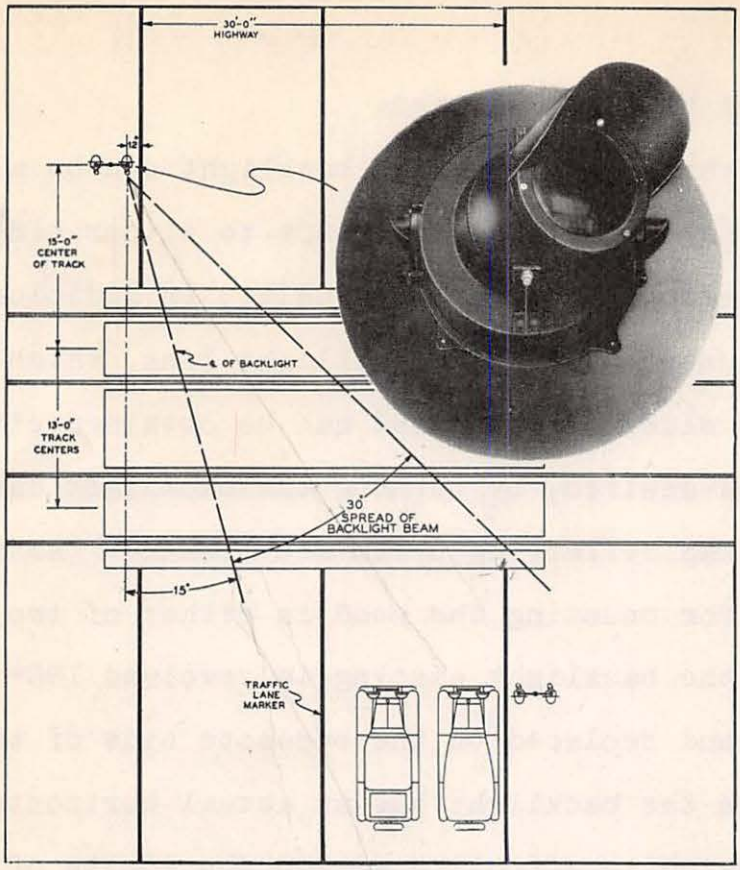

Fig. 3. Diagram showing Beam Spread of one Style HC-8 Backlight Signal Unit applied to 2 track Highway Crossing.

"HC-5" but due to the fact that the lamp is located in the parabolic reflector and back of the sidelights, the cover glasses on the sidelights are provided, on their inner surfaces, with a series of vertical prisms designed to deflect the light so that it emerges at right angles to main beams. The front cover glass is an 8 3/8" diameter 30° convex spreadlight roundel. A more intense main indication is obtained, but this type of cover glass does not provide the side indication that is obtained with the cover glass used on the "HC-5" unit. There is, however, not the necessity for the close-up or side indication as the backlight on the opposite signal provides this indication.

The "HC-8" Signal is otherwise very similar to the Style

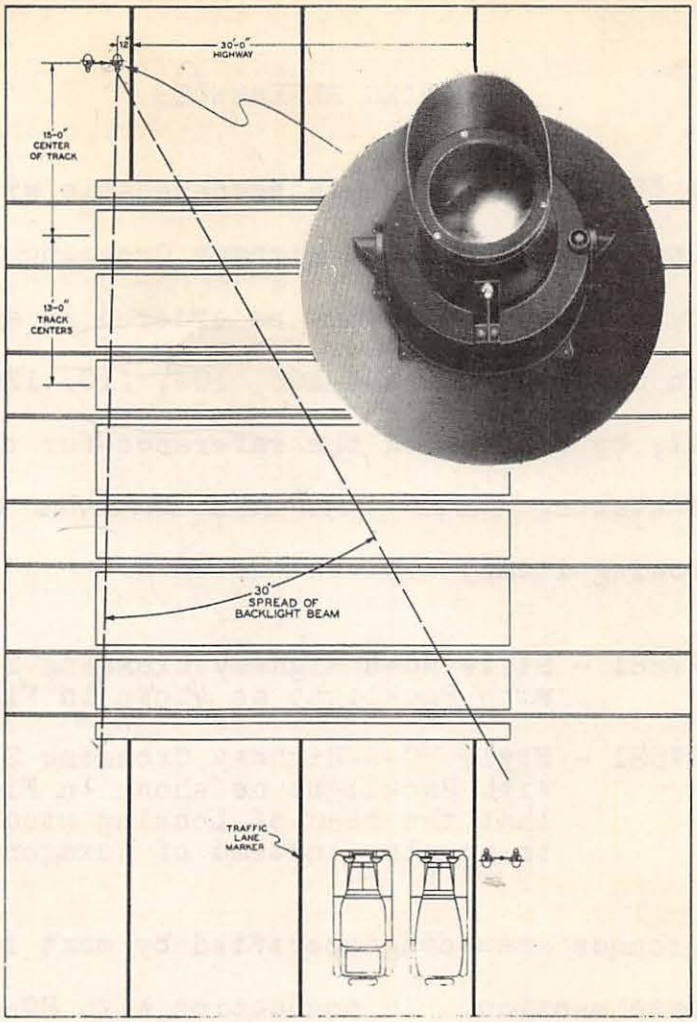

Fig. 4. Diagram showing Beam Spread of one Style HC-8 Backlight Signal Unit applied to 4 track Highway Crossing.

"HC-5" type described in Bulletin #125. It may be furnished with or without background, and for exceptional cases a blank rear cover may be had in place of the adjustable backlight. We recommend the "HC-5" for these cases, however, on account of the close-up indication of the cover glass as described above. The front of the signal unit is hinged and is opened by applying a socket wrench in the receptacle shown in View "X" Fig. 2 and also on the back of the unit in Fig. 4, this making a padlock unnecessary.

ORDERING REFERENCES

Style "HC-8" Units are interchangeable with Styles HC-3, HC-5 and HC-7 Units, and Complete Highway Crossing Flashing Light Signals with Style "HC-8" Units may be ordered in any of the combinations shown in Catalog Plates K-108, 109, 110, 120, 121, 122, 123, 124, 143 and 147, by mentioning the reference for the proper Plate combination and stating *"except with HC-8 Unit Pc. No.------"* (from one of the following items)

Pc. No. 177881 - Style HC-8 Highway Crossing Signal Unit with Backlight as shown in Fig. 2.

Pc. No. 177581 - Style HC-8 Highway Crossing Signal Unit with Backlight as shown in Fig. 2, except that the head of Locking Stud "View X" is triangular instead of hexagonal in shape.

Backgrounds are being specified by most railroads; when not desired please mention. In connection with HC-42 Units as shown on Plate K-126 it should be noted that if backgrounds are wanted with "HC-8" Units, the lamp centers must be 3' - 0" instead of 2'- 6".

H. H. Cadwallader
7/13/31